

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
(Attorney Docket № 16055US01)**

In the Application of:

Ling Su, et al.

Serial No. 10/810,998

Filed: March 26, 2004

For: COLLABORATIVE COEXISTENCE
WITH DYNAMIC PRIORITIZATION
OF WIRELESS DEVICES

Examiner: Matthew C. Sams

Group Art Unit: 2617

Confirmation No. 8997

Electronically Filed on 23-NOV-2009

REPLY BRIEF

MS: APPEAL BRIEF-PATENTS
Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

Sir:

In accordance with 37 CFR § 41.41, the Appellant submits this Reply Brief in response to the Examiner's Answer mailed on September 28, 2009. Claims 42-71 are pending in the present Application. The Appellant has responded to the Examiner in the Examiner's Answer, as found in the following Argument section.

As may be verified in his final Office Action (page 4), dated February 24, 2009 ("Final Office Action"), the present application includes claims 42-71, all of which stand

rejected under 35 U.S.C. 103(a). See the Final Office Action at page 4. Claims 1-70 were previously cancelled. The Appellant identifies claims 42-71 as the claims that are being appealed. To aid the Board in identifying corresponding arguments, the Appellant has used the same headings in the Argument section of this Reply Brief as the headings found in the Appellant's corresponding Brief on Appeal. The Brief on Appeal has a date of deposit of July 20, 2009.

STATUS OF THE CLAIMS

Claims 42-71 were finally rejected. Pending claims 42-71 are the subject of this appeal.

ARGUMENT

I. The Proposed Combination of Lane and Liang Does Not Render Claims 42, 43, 45, 47-53, 55-58, 60, 62-68, 70, and 71 Unpatentable

Claims 42, 43, 45, 47-53, 55-58, 60, 62-68, 70, and 71 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Lane in view of Liang.

A1. Independent Claims 42 and 57

The Appellant stands by the argument made in the corresponding section of the Brief on Appeal.

In response to Appellant's Brief on Appeal, the Examiner is using the following argument stated on pages 10-12 of the Examiner's Answer (which are also repeated again on pages 12-14):

In response to the Appellant's argument regarding claims 42 and 57 that the combination of Lane and Liang does not disclose or suggest at least the limitation of generating two or more priority signals to control prioritization of information between corresponding MAC interfaces for each of said plurality wireless transmitter and/or receiver devices within said chip (Pages 5-6), the Examiner respectfully disagrees.

Lane teaches a first priority signal when the "BT MAC 130 receives information from the 802.11 MAC 170 regarding the priority of the 802.11 events". (Lane Col. 4 lines 64-66) Lane's teaches a second priority signal with "the BT MAC 130 transmits a transmit disable command to the 802.11 radio 160 whenever the BT MAC 130 needs to process a high-priority BT receive or transmit event". (Lane Col. 5 lines 16-23) These are two separate priority signals sent between the MAC interfaces in order to resolve collisions, to prevent saturation of the Bluetooth devices (Lane Col. 3 lines 6-8) and to ensure no physical damage occurs to the Bluetooth device. (Lane Col. 2 lines 59-61) Further, Lane teaches two transmission lines (one in each direction) between the 802.11 MAC (Fig. 2 [270]) and the Bluetooth MAC (Fig. 2 [230]) for transmitting priority control signals. (Fig. 2 and Col. 5 lines 43-51)

Finally, it appears to the Examiner that the Appellant is confusing two

related topics, priority signals and the order (sometimes inherently determined by the transmission of priority signals (i.e. the highest priority signal is an example of an inherent order). The Appellant is focusing on Lane's teaching of "the BT MAC 130 transmits a transmit disable command to the 802.11 radio 160 whenever the BT MAC 130 needs to process a high-priority BT receive or transmit event" (Lane Col. 5 lines 16-23, Appellant's afterfinal Arguments Pages 9-10 and Appeal Brief Page 6) as being the only priority signal generated. In order to further clarify the issue, the Examiner is looking at the related teachings of Liang. Liang discloses that typically "voice transmission and reception over Bluetooth is given priority over all other data traffic" (Liang Page 3 [0024]), but when the Bluetooth is not seeking to transmit/receive voice data, a priority scheme is used to determine whether to give access to the WLAN/802.11 radio or Bluetooth radio. (Liang Page 3 [0024]) Therefore, there are times (as explained in both Lane Col. 4 line 39 through Col. 5 line 51 and Liang Page 3 [0024 & 0027]) when the 802.11 radio will have priority over the Bluetooth radio or vice versa once the MACs have determined the order of the transmissions from the at least two priority signals. (Lane Col. 4 lines 64-66, Col. 5 lines 16-17 and Col. 5 lines 20-23)

The Appellant disagrees. The Examiner is using the following new argument, appearing for a first time in the Examiner's Answer:

Lane teaches a first priority signal when the "BT MAC 130 receives information from the 802.11 MAC 170 regarding the priority of the 802.11 events". (Lane Col. 4 lines 64-66).

The Examiner is, in effect, equating the first of Appellant's "two or more priority signals to control prioritization" with Lane's information regarding priority of 802.11 events received by the BT MAC 130. Even though Lane discloses that such information may be communicated from the 802.11 MAC 170 to the BT MAC 130, Lane, however, does not disclose that the information received by the BT MAC 130 is used for purposes of controlling prioritization of transmission between the two MAC interfaces. In fact, Lane is silent and does not provide any details as to how such information received from the 802.11 MAC is used by the BT MAC 130. All that Lane discloses is that a **single**

transmit disable command is communicated to the 802.11 radio whenever the BT MAC 130 needs to process a high-priority BT receive or transmit event. The Appellant notes that the above underlined language, which appears in col. 5, lines 21-23 of Lane, conditions the communication of the single transmit disable command only on whether the BT MAC 130 needs to process a high-priority BT receive or transmit event, without any reference, comparison or even mention of the information received from the 802.11 MAC 170 and how such information is used, if at all, in the transmission of the single transmit disable command. In this regard, there is no disclosure in Lane that the information communicated from the 802.11 MAC 170 to the BT MAC 130 is a priority signal used to "resolve collisions, to prevent saturation of the Bluetooth devices and to ensure no physical damage occurs to the Bluetooth device," as alleged by the Examiner.

The Appellant respectfully maintains that the combination of Lane and Liang does not teach at least Appellant's "two or more priority signals to control prioritization", and Appellant submits that independent claims 42 and 57 are allowable.

I-C. Rejection of Dependent Claims 45 and 60

The Appellant stands by the argument made in the corresponding section of the Brief on Appeal.

In response to Appellant's Brief on Appeal, the Examiner is using the following argument stated on pages 14-15 of the Examiner's Answer:

In response to the Appellant's argument that Lane and Liang' does not disclose or suggest at least the limitation of "controlling connection time

of one or more of said plurality of wireless transmitter and/or receiver via said configuration of said one or more of said corresponding MAC interface devices" (Pages 9-10), the Examiner respectfully disagrees.

Lane in view of Liang teaches a plurality of wireless transmitter and/or receiver devices (Lane Fig. 2 [260 & 220], Liang Fig. 1 [104 & 106] and Page 2 [0021]) that coordinate communication of information between them by configuring the 802.11 MAC (Lane Fig. 2 [270]) interface with the Bluetooth MAC (Lane Fig. 2 [230]) interface by transmitting two or more priority control signals there-between (Lane Col. 5 lines 43-51), with the ability to dynamically balance which radio is given priority based on the amount of recent activity in a given time period. (Liang Page 3 [0024] and Page 5 [0037]). Therefore, the combination of Lane in view of Liang enables a priority control signaling scheme between a Bluetooth MAC and 802.11 MAC with the results of the priority signals being decided based on the activity in a given time period of the radios.

The Appellant disagrees. The Examiner is, in effect, repeating his arguments appearing in Section I-A above.

The Examiner has equated the first of Appellant's "two or more priority signals to control prioritization" with Lane's information regarding priority of 802.11 events received by the BT MAC 130. Even though Lane discloses that such information may be communicated from the 802.11 MAC 170 to the BT MAC 130, Lane, however, does not disclose that the information received by the BT MAC 130 is used for purposes of controlling prioritization of transmission between the two MAC interfaces. In fact, Lane is silent and does not provide any details as to how such information received from the 802.11 MAC is used by the BT MAC 130. All that Lane discloses is that a single transmit disable command is communicated to the 802.11 radio whenever the BT MAC 130 needs to process a high-priority BT receive or transmit event. The Appellant notes that the above underlined language, which appears in col. 5, lines 21-23 of Lane, conditions the communication of the single transmit disable command only on whether

the BT MAC 130 needs to process a high-priority BT receive or transmit event, without any reference, comparison or even mention of the information received from the 802.11 MAC 170 and how such information is used, if at all, in the transmission of the single transmit disable command.

The Appellant respectfully submits that the combination of Lane and Liang does not disclose "controlling connection time of one or more of said plurality of wireless transmitter and/or receiver via said configuration of said one or more of said corresponding MAC interface devices," as recited in dependent claims 45 and 60.

I-H. Rejection of Dependent Claims 51 and 66

The Appellant stands by the argument made in the corresponding section of the Brief on Appeal.

In response to Appellant's Brief on Appeal, the Examiner is using the following argument stated on pages 15-16 of the Examiner's Answer:

In response to the Appellant's argument that Lane and Liang does not disclose or suggest at least the limitation of "assigning first and second priority control signals selected from said two or more priority control signals, to first and second wireless transmitter and/or receiver devices selected from said plurality of wireless transmitter and/or receiver devices" (Pages 12-13), the Examiner respectfully disagrees.

Lane teaches a first priority signal when the "BT MAC 130 receives information from the 802.11 MAC 170 regarding the priority of the 802.11 events". (Lane Col. 4 lines 64-66) Lane's teaches a second priority signal with "the BT MAC 130 transmits a transmit disable command to the 802.11 radio 160 whenever the BT MAC 130 needs to process a high-priority BT receive or transmit event". (Lane Col. 5 lines 16-23) These are two separate priority signals sent between the MAC interfaces in order to resolve collisions, to prevent saturation of the Bluetooth devices (Lane Col. 3 lines 6-8) and to ensure no physical damage occurs to the

Bluetooth device. (Lane Col. 2 lines 59-61) Further, Lane teaches two transmission lines (one in each direction) between the 802.11 MAC (Fig. 2 [270]) and the Bluetooth MAC (Fig. 2 [230]) for transmitting priority control signals. (Fig. 2 and Col. 5 lines 43-51)

Liang discloses that typically "voice transmission and reception over Bluetooth is given priority over all other data traffic" (Liang Page 3 [0024]), but when the Bluetooth is not seeking to transmit/receive voice data, a priority scheme is used to determine whether to give access to the WLAN/802.11 radio or Bluetooth radio. (Liang Page 3 [0024]) Therefore, there are times (as explained in both Lane Col. 4 line 39 through Col. 5 line 51 and Liang Page 3 [0024 & 0027]) when the 802.11 radio will have priority over the Bluetooth radio or vice versa once the MACs have determined the order of the transmissions from the at least two priority signals. (Lane Col. 4 lines 64-66, Col. 5 lines 16-17 and Col. 5 lines 20-23)

The Appellant disagrees. As explained in the preceding section I-A, Lane does not disclose Appellant's "two or more priority signals to control prioritization". More specifically, there is no disclosure in Lane that the information communicated from the 802.11 MAC 170 to the BT MAC 130 is a priority signal used to "resolve collisions, to prevent saturation of the Bluetooth devices and to ensure no physical damage occurs to the Bluetooth device," as alleged by the Examiner.

Even though Liang discloses the use of a priority scheme, such priority scheme is not based on assigning priority indications selected from a plurality of available indications. Instead, Liang uses a weighting scheme via a dynamic bias factor, which allows for giving absolute non-voice priority to the WLAN function 104.

Therefore, the Appellant maintains that the combination of Lane and Liang does not disclose or suggest at least the limitation of "assigning first and second priority control signals selected from said two or more priority control signals, to first and

second wireless transmitter and/or receiver devices selected from said plurality of wireless transmitter and/or receiver devices".

The Appellant respectfully submits that dependent claims 51 and 66 are allowable.

I-I. Rejection of Dependent Claims 52 and 67

The Appellant stands by the argument made in the corresponding section of the Brief on Appeal.

In response to Appellant's Brief on Appeal, the Examiner is using the following argument stated on pages 16-17 of the Examiner's Answer:

In response to the Appellant's argument that Lane and Liang does not disclose or suggest at least the limitation "receiving or transmitting data on said first of said plurality of wireless transmitter and/or receiver devices in accordance with the relative priority of said first priority control signal to said second priority control signal" (Pages 13-14), the Examiner respectfully disagrees.

Lane teaches a first priority signal when the "BT MAC 130 receives information from the 802.11 MAC 170 regarding the' priority of the 802.11 events". (Lane Col. 4 lines 64-66) Lane's teaches a second priority signal with "the BT MAC 130 transmits a transmit disable command to the 802.11 radio 160 whenever the BT MAC 130 needs to process a high-priority BT receive or transmit event". (Lane Col. 5 lines 16-23) These are two separate priority signals sent between the MAC interfaces in order to resolve collisions, to prevent saturation of the Bluetooth devices (Lane Col. 3 lines 6-8) and to ensure no physical damage occurs to the Bluetooth device. (Lane Col. 2 lines 59-61) Further, Lane teaches two transmission lines (one in each direction) between the 802.11 MAC (Fig. 2 [270]) and the Bluetooth MAC (Fig. 2 [230]) for transmitting priority control signals. (Fig. 2 and Col. 5 lines 43-51)

Further, Liang discloses that typically "voice" transmission and reception over Bluetooth is given priority over all other data traffic" (Liang Page 3

[0024]), but when the Bluetooth is not seeking to transmit/receive voice data, a priority scheme is used to determine whether to give access to the WLAN/802.11 radio or Bluetooth radio. (Liang Page 3 [0024]) Therefore, there are times (as explained in both Lane Col. 4 line 39 through Col. 5 line 51 and Liang .Page 3 [0024 & 0027]) when the 802.11 radio will have priority over the Bluetooth radio or vice versa once the MACs have determined the order of the transmissions from the at least two priority signals. (Lane Col. 4 lines 64-66, Col. 5 lines 16-17 and Col. 5 lines 20-23 and Liang Page 3 [0024-0026])

The Appellant disagrees. As explained in the preceding section I-A, Lane does not disclose Appellant's "two or more priority signals to control prioritization". More specifically, there is no disclosure in Lane that the information communicated from the 802.11 MAC 170 to the BT MAC 130 is a priority signal used to "resolve collisions, to prevent saturation of the Bluetooth devices and to ensure no physical damage occurs to the Bluetooth device," as alleged by the Examiner.

In addition, even if we assume, arguendo, that the information communicated from the 802.11 MAC 170 to the BT MAC 130 is a priority signal, Lane is still deficient since there is no relative priority of the first priority control signal (i.e., the information communicated from the 802.11 MAC 170 to the BT MAC 130) to the second priority control signal (i.e., the transmit disable command sent from the BT MAC 130 to the 802.11 MAC 170). In fact, Lane does not disclose that relative priority may even be determined the information communicated from the 802.11 MAC 170 to the BT MAC 130 and the transmit disable command sent from the BT MAC 130 to the 802.11 MAC 170. Liang does not overcome these deficiencies.

Therefore, the Appellant maintains that the combination of Lane and Liang does not disclose or suggest at least the limitation "receiving or transmitting data on said first

of said plurality of wireless transmitter and/or receiver devices in accordance with the relative priority of said first priority control signal to said second priority control signal".

The Appellant respectfully submits that dependent claims 52 and 67 are allowable.

I-L. Rejection of Dependent Claims 56 and 71

The Appellant stands by the argument made in the corresponding section of the Brief on Appeal.

In response to Appellant's Brief on Appeal, the Examiner is using the following argument stated on pages 17-18 of the Examiner's Answer:

In response to the Appellant's argument that Lane and Liang does not disclose or suggest at least the limitation of "said first priority control signal comprises a user-specified priority indication for said first of said plurality of wireless transmitter and/or receiver devices, such that said first of said plurality of wireless transmitter and/or receiver devices is given priority in the reception or transmission of data relative to said first of said plurality of wireless transmitter and/or receiver device" (Pages 15-16), the Examiner respectfully disagrees.

It is the Examiner's opinion that since Lane in view of Liang both teach a priority control system (Lane Col. 5 lines 35-51 and Liang Page 3 [0024]), that it would be obvious to one of ordinary skill in the art to be motivated to utilize the priority control system of Lane (Col. 5 lines 35-51) to implement end-user arbitration of Liang. (Page 1 [0006]) In other words, if the 802.11 radio is currently operating and the user decides to turn the 802.11 radio off in order to use the Bluetooth radio, it makes sense to utilize the pre-existing priority control system so that the "802.11 MAC 270 receives a transmit disable command from the BT MAC 230" (Lane Col. 5 lines 48-49), thereby reusing the existing circuitry to provide additional features.

The Appellant disagrees. As explained in pages 15-16 of the Appeal Brief, Liang's "end-user arbitration" is used to manually switch between different wireless technologies

when simultaneous operation is not possible between such technologies. On the other hand, the single priority signal in Lane is used to implement prioritization when **simultaneous operation is possible**. Therefore, Lane and Liang, in this instance, cover two completely different and mutually exclusive applications. As such, the Appellant submits that Lane and Liang may not even be properly combined under the circumstances.

Even if Lane and Liang are properly combinable, Lane would still render such combination deficient since neither the information communicated from the 802.11 MAC 170 to the BT MAC 130 is a priority signal (the alleged "first" priority signal), nor the transmit disable command sent from the BT MAC 130 to the 802.11 MAC 170 (the alleged "second" priority signal) are user-specified priority indications.

The Appellant respectfully submits that dependent claims 56 and 71 are allowable.

CONCLUSION

The Appellant submits that the pending claims are allowable in all respects. Reversal of the Examiner's rejections for all the pending claims and issuance of a patent on the Application are therefore requested from the Board.

The Commissioner is hereby authorized to charge additional fee(s) or credit overpayment(s) to the deposit account of McAndrews, Held & Malloy, Ltd., Account No. 13-0017.

Respectfully submitted,

Date: 23-NOV-2009

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